Human Factors

research and technology division

Attention Management in the Cockpit

Objective

Cockpit operations require managing the demands of multiple tasks concurrently. Interruptions, distractions, preoccupation, and lapses of attention have played a crucial role in many accidents in aviation and in other workplace settings. This project investigates the cognitive demands of concurrent task management and seeks to develop procedures and techniques that crews can use reduce vulnerability to error.

Approach

We are analyzing NTSB accident reports and ASRS incident reports to characterize errors frequently made in concurrent task management in cockpit operations. We are using questionnaires to learn how experienced pilots attempt to prevent errors. These analyses will guide laboratory studies in which we investigate the cognitive demands of concurrent task management and develop methods to reduce error. We will couch our findings as methods training departments can use to train crews to reduce vulnerability and to manage interruptions and distractions.

Impact

Our findings will provide information to alert pilots to vulnerability to this class of error, to design flight simulation scenarios that realistically challenge crews, and to develop methods for managing concurrent task demands effectively. The net result will be safer operations.

POC: R. Key Dismukes, Ph.D.

URL: http://humanfactors.arc.nasa.gov/ihs/flightcognition/